Temperature Controller

DATA SHEET
602 SERIES

FEATURES

Plug-in Design
Thermocouple Sensor
Relay, Solid State, or Process Outputs
Analog Indication
Time Proportioning
Automatic Reset
115/230V Operation (Field Selectable)
Power Indication
Load Power Indication
Heating or Cooling mode available

GENERAL

The Series 602 is a plug-in Din temperature controller. The control mode is time proportioning with automatic reset. There is a front panel adjustment for the proportional band and internal adjustments for the auto reset on all models and for cycle time on the solid state and relay output models. Access to internal adjustments is available by loosening just one screw and pulling the controller out of the case. Analog meter indication is available in the form of a deviation meter or a direct reading meter. In addition, there are front panel mounted L.E.D.'s to indicate when A.C. power is applied to the controller and when power has been applied to the load. Sensor inputs available are Types "J" and "K" thermocouple. Outputs available are relay, solid state, and process.

SPECIFICATIONS:

CONTROL MODE: Time proportioning with automatic reset.

PROPORTIONAL BAND: Front panel adjustment is:
1) (Relay and solid state outputs) 5 to 50°F.
2) (Process outputs) 5 to 100°F.

AUTO RESET:
Internal adjustment. Adjustable over a range of 0.5 to 0.05 repeats per minute. Can be defeated by adding a jumper wire internally on process units or across terminals 1 and 2 on the barrier strip for the other models.

CYCLE RATE: Relay and solid state models only. Internal adjustment. Range of adjustment is 1 to 20 seconds.

SENSOR: Thermocouple, Types "J" and "K".

OUTPUTS:
1) Relay: S.P.D.T. plug-in. Rated at 10A/120V, 5A/240V resistive, 50 V.A. inductive.
2) Solid State:
   a) Zero switching isolated triac rated 1 ampere at 120/240V. Note: Load current must be 0.05 amperes to insure proper triac switching.
   b) Zero switching isolated triac rated 15 amperes at 120/240V. Note: Load current must be 0.1 amperes to insure proper triac switching.
3) Process Outputs: (Current output into 500 ohms load maximum.)
   a) 0 - 20 mA/0 - 5V.
   b) 4 - 20 mA/1 - 5V.
   Note: Terminals 4 and 5 must be jumped if voltage output only is to be used.

INDICATION:
1) Direct Reading: An analog meter superimposed over the dial scale that indicates temperature directly.
2) Deviation: A calibrated analog meter integral to the controller that uses the set point temperature ± 30°C or ± 50°F to indicate process temperature.

INDICATOR LIGHTS: Long life L.E.D.'s.
1) Power: Indicates when A.C. power has been applied to the controller.
2) Load: Indicates when power has been applied to the load.

LINE VOLTAGE: 115/230 VAC, −10%, +20% 50/60 Hz.

POWER CONSUMPTION: Less than 5 V.A.

OPERATING AMBIENT: 30 to 130°F.

SET POINT SHIFT W/AMBIENT:
Typically 10 microvolts/°F referred to the input.

SET POINT SHIFT W/LINE VOLTAGE:
Typically ± 0.1% of span for ± 10% change in line voltage.

ISOLATION:
T.C. input to load and line for relay and solid state models. D.C. resistance: 10^{11} ohms. Capacitance: 50 pf.

SENSOR PROTECTION:
In the event of an open sensor, load power will be removed.

REMOTE CONTROL OR SLAVING:
The unit has the capability of being controlled by an external source. There is also the possibility of slaving one controller to another for master control from one location. Consult the factory for further information.

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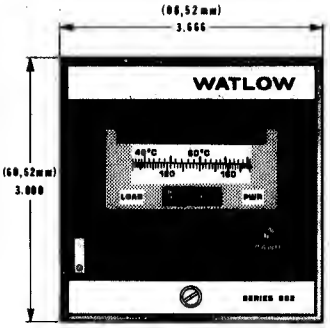
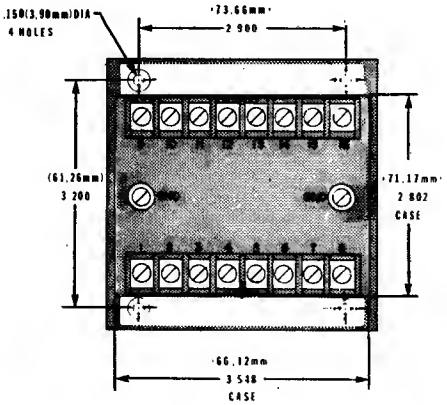
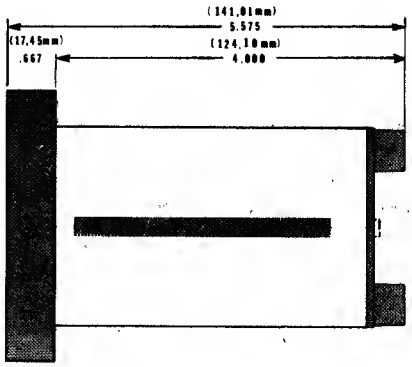
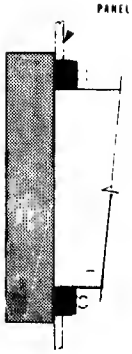
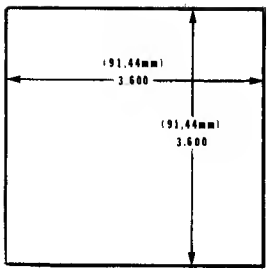
WINONA, MINNESOTA 55987 • 1265 EAST SANBORN STREET • PHONE 507 454-5300



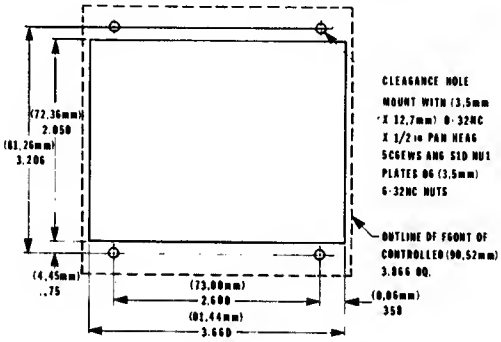




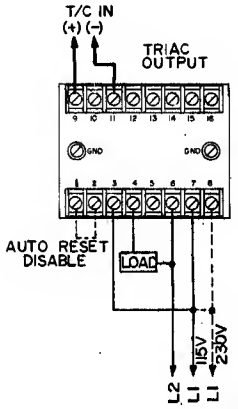


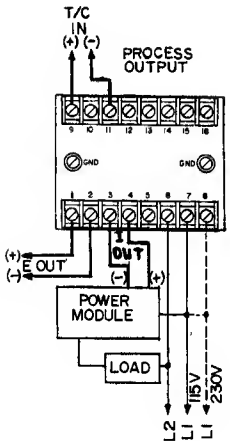


PANEL CUTOUT



ALTERNATE PANEL CUTOUT





SERIES 802
TEMPERATURE CONTROL

TERMINAL DESIGNATIONS

1. + } VOLTAGE (OUT)
2. − }
3. − } CURRENT (OUT)
4. + }
5. NOT USED
6. A.C. LINE COMMON, L2
7. 120V LINE, L1
8. 240V LINE, L1
9. T.C. + } SENSOR
10. NOT USED }
11. T.C−, REO }
12. NOT USED
13. SET POINT + (OUT)
14. PROGRAMMER + (IN)
15. SIGNAL COND. + (OUT)
16. CIRCUIT COMMON

MODEL: _____

RANGE: _____

T.C. TYPE: _____

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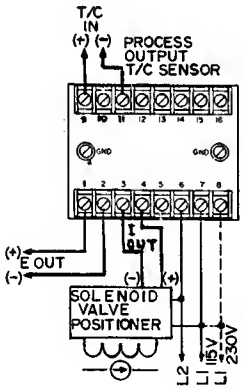
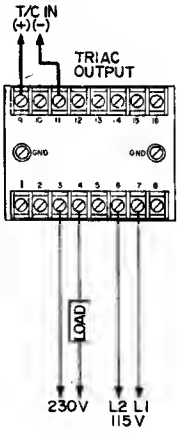




SERIES 802
TEMPERATURE CONTROL

TERMINAL DESIGNATIONS

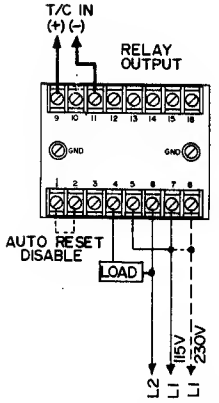
1. + } AUTO. RESET DISABLE
2. − }
3. T1 } N.O. SOLID STATE
4. T2 } OUTPUT
5. GATE (FOR EXTERNAL TRIAC)
6. A.C. LINE COMMON, L2
7. 120V LINE, L1
8. 240V LINE, L1
9. T.C. + } SENSOR
10. NOT USED }
11. T.C−, REO }
12. NOT USED
13. SET POINT + (OUT)
14. PROGRAMMER + (IN)
15. SIGNAL COND. + (OUT)
16. CIRCUIT COMMON

MODEL: _____

RANGE: _____

T.C. TYPE: _____

WATLOW WINONA
WINONA, MINN.



SERIES 802
TEMPERATURE CONTROL

TERMINAL DESIGNATIONS

1. + } AUTO. RESET DISABLE
2. − }
3. N.C. } CONTACT RATED
4. N.O. } 230V MAX., 5AMP. R.M.S.
5. C. }
6. A.C. LINE COMMON, L2
7. 120V LINE, L1
8. 240V LINE, L1
9. T.C. + } SENSOR
10. NOT USED }
11. T.C−, REO }
12. NOT USED
13. SET POINT + (OUT)
14. PROGRAMMER + (IN)
15. SIGNAL COND. + (OUT)
16. CIRCUIT COMMON

MODEL: _____

RANGE: _____

T.C. TYPE: _____

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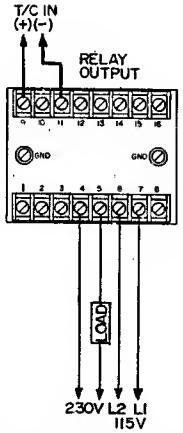

ORDERING INFORMATION

1	2	3	4		5	6	7		8	9	10
6	A	1		−	6			−	6		

4. INOICATION
   1 - ANALOG (D.R.)
   2 - ANALOG (OEV.)

6. OUTPUT MODE
   0 - COOLING
   1 - HEATING

7. OUTPUT
   B) 10A RELAY
   C) 1A TRIAC
   D) 15A TRIAC
   E) 4-20 mA/1-5V
   L) 0-20 mA/0-5V

RANGE CODE - T/C ONLY
SEE RANGE CHART 3.

NOTE: Consult factory on availability of 15A output.